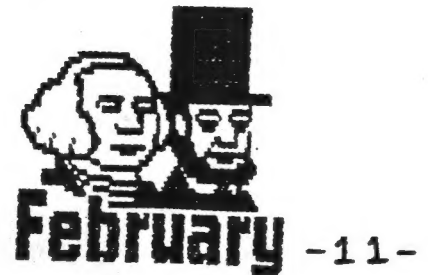


LISTing Newsletter

Newsletter of the Long Island
Sinclair/Timex Users Group

JANUARY

Next Meeting



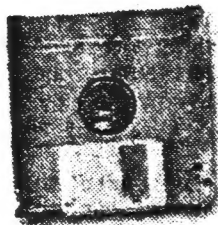
From Low-Fidelity to High-Fidelity Sound on Computers

Wave-table synthesis may sound like the latest group featured on MTV's Alternative Nation, but actually is the way that the next generation of PC's will process sound to create more realistic games and applications.

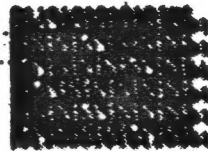
It works by using acutal notes played on musical instruments and essentially replaces the somewhat clunky technology used in creating sounds with the musical instrument digital interface, or M.I.D.I. That technique requires a great deal of programming and can be difficult for many musicians to learn.

Old Way M.I.D.I. Sound Synthesis

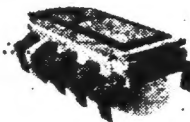
1 Software is loaded.



2 It sends messages in computer code to the sound chip. Programmers who want the note 'A' have to try and approximate a given instrument, which often sounds like a portable video game.



3 The sound chip creates synthesized music that is turned into an analog signal, amplified and played through a speaker.



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L.I.S.T. officers

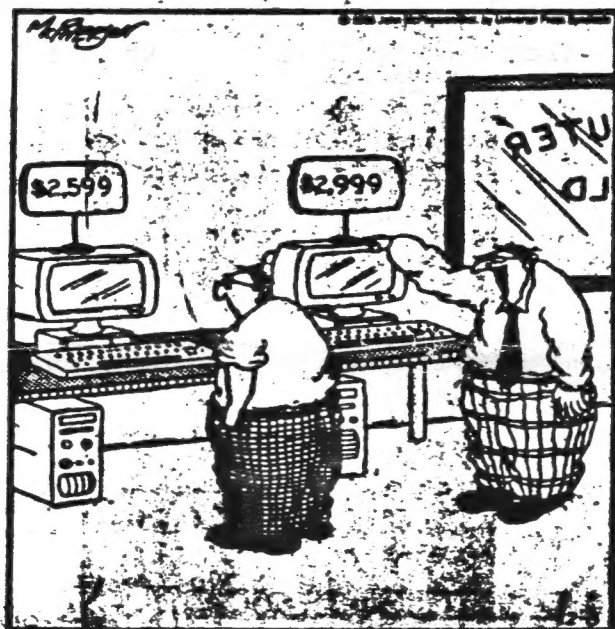
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Please send all inquiries and submissions (including dues) to: L.I.S.T.

Mr. Harvey Rait
5 Peri Lane,
Valley Stream, N. Y. 11581

COMING EVENTS: The next L.I.S.T. meeting will be Sunday FEB. 11 at 2 P.M. at the home of Harvey Rait (see address above).

CLOSE TO HOME



The main difference is that that system will be obsolete in eight months, whereas, for only \$400 more, you can have a system that's guaranteed not to be obsolete for a full year.

Break in system — literally

If you have a new computer sitting somewhere at home, here's some advice you probably didn't get at the store where you bought it. Turn it off. Keep it on. Try to break it.

Most computer sellers will exchange defective machines for new ones for at least the first 30 days that you have them in possession, so it's a good idea to give one of these complex devices a serious shakedown in the early days of ownership.

The reason you want to put as much stress as possible on the new machines is a phenomenon rather indelicately dubbed the infant mortality syndrome by computer experts. Since the machines have few moving parts, most troubles surface quickly, and once these machines get past this early peril they tend to work flawlessly for a long time.

Of course, shaking down one of these complex new gadgets can be quite a stretch for somebody who is brand new to any sort of computer, so here's a list of things you should do right away:

■ Leave the computer and the monitor turned on around the clock. If there is a major problem, such as a defective picture tube or a flawed hard drive, it almost certainly will show up under 30 days of continual running time.

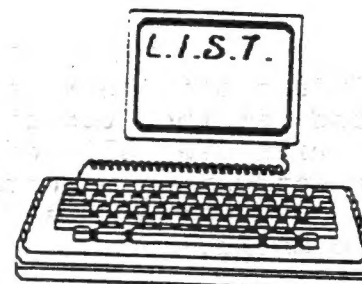
■ Do as much as you can to put stress on that hard drive. When you're doing something with your new word processor or spreadsheet or paint program, use the save command often. If possible, get a screen saver such as Microsoft Scenes that includes routines that continually change the display by calling up stuff from the hard drive.

■ Print out a lot of stuff. You'll probably burn up \$20 worth of ink, but you'll know if the printer is a dud.

■ Get the modem up and running by logging on to one of the online services included in the package. It doesn't matter if you feel awkward and out of place, you'll know that the machine will get you online a bit later down the road when you're more familiar with the strange new machine.

■ Your new machine also most likely came with a built-in fax capability, and you should go through the steps to make it send a fax, too, so you'll know that this feature also works.

Chicago Tribune



QL CORNER

I would like to extend a very healthy and a Happy New Year to all our LIST membership.

As you may know, I have taken the responsibility as the east coast QUANTA librarian. Approximately seven to eight years ago I had joined the membership of QUANTA. I had purchased the software library from the local librarian which consisted of approximately 40,720 disks. The majority of the programs were OK, however, several programs included within the library package were professional. Page Designer by Dilwyn Jones, a suite of utilities from Kemo Salmi, Indexer by Tony Shields and some others which were in the professional category.

Since then the QUANTA library has been expanded; approximately 100,720 disks are available. The latest addition to the library contains some worthwhile programs and I would like to review some of them for our membership.

PS-02 has the latest version of XCHANGE 3.90L and all manuals for QUILL, ARCHIVE, ABACUS and EASEL and XCHANGE and IMPEXPORT are in _doc format. All files are zipped into two _zip files and a BOOT program to help you unzip the files. When I unzipped the manual files, only seven files out of the thirteen files were unzipped.

Without going into details of unzipping the manuals, list the Boot file, EDIT line 200 and change the loop from 7 to 13. When the Boot requests the Destination drive, enter RAM1_ and all 13 manual files will be unzipped into the RAM file (if you have HD or ED drives enter the destination drive name). For DD disk drive users, use WCOPY, entering 'y' for each file until the disk is full, then remove the disk and insert another DD disk in you drive, answer 'A' (for all remaining files) to complete transfer the files to disk.

To unzip the XCHANGE file, enter GOTO 320 and the unzip process will take place.

One of the new features of XCHANGE is PEDIT_bas which is the file that produces the printer drivers for the Psion programs. The printer drivers can be set up for ODD pages, EVEN pages for single sheet, ODD pages, EVEN pages for fan fold paper and the translates for setting up those special codes number 50! Soooo, for the price of about \$1.25 you can have the latest version of XCHANGE Post Paid @ 50 cents for the disk and 75 cents for postage.

There is another good program that resides on disk UG-08, VIEWER. This program allows any kind of file to be viewed. It is similar to a text editor, however, the program does not have any editing features. It's main purpose is to view files, you know, like Readme, _lis and _txt files, SuperBASIC programs, machine code and compiled programs and so on. The program was written by Dilwyn Jones, so you know it's great! Look at the screen dump and at the top of the picture, you will see all of the commands. To activate any command, just depress SHIFT and the first letter of the command.

A HELP file is available and it is activated by depressing F1; to go

Block Chain End Find Load Merge Next Order Print Read Save Top Window

This program does not allow you to edit text files; with the type of files I had in mind which are basically information conveyors, that facility is best left out. This program of mine is public domain and can be used to distribute such text files or even applications such as text-only catalogues. The only restriction I make on its distribution is that it should be freely given away for no profit. You can make a small charge to cover your costs as per normal PD distribution practice. Please include the program and this text file (the instructions).

If you want to use this viewer to distribute commercial software packages such as data in the form of text files, please call to ask about terms. Normally there will be no charge as long as the Viewer is incidental to the package as a whole, though I may ask for a copy of the package in return!

Viewer - page 1 -

↑↓-up/down SHIFT↑↓-Page ALT SHIFT↑↓-Top/Bottom F4-Redraw F1-Help ESC-Quit
FILE:FLP1_VIEWER.TXT LINES:794 LINE:65

back to the main screen use ESCAPE. For those long text files you can page through the file one page at a time with SHIFT down or up cursor keys (arrows), and to page to the bottom or top of the file, use ALT-SHIFT cursor keys. You may notice that there is a marker on the right hand side of the screen (it looks like a cursor). This bar moves in the same direction as the text scrolls, providing a visual indicator of how long the file is. An operating manual is on the disk as well as an UPDATE file.

There are other programs on the same disk with VIEWER such as: ScreenSaver (a screen blanking program with a configuration program to set the time limit for the screen blanking).

Again, for a dollar-twenty-five it is a bargain!

The second screen dump is from a program called 'DOCTOR'; QUANTA disk UG-10. The picture reminds me of a disk editor and in reality, it is. However, the author Arvid Borretzen states that he required a file editor for his work and this is how DOCTOR originated.

The program is easy to use. The only thing that I will warn you about is that if you delete characters from a file you must insert an equal amount of spaces or other characters in its place or the file will not function properly or not at all. However, the program serves a need for some of you, I am sure. The cursor defaults at the first character (HEX number). If you wish to alter the text, depress 'TAB' and the cursor will move onto the text area.

There are additional commands for DOCTOR, depress F3 and they are as follows: Find, Replace, Go To HEX, Top, Bottom, Save, Load, Print, Catalogue, Erase and Quit. And again, another professional program for a buck-twenty-five.

00000000	0A 20 20 20 20 20 20 54	0	T	0 ARVID BORRETZEN
00000008	45 58 54 20 46 49 4C 45	EXT FILE		TLF +47 53 41 20 92
00000010	20 56 49 45 57 45 52 2C	VIEWER,		+47 53 49 33 22
00000018	20 42 59 20 44 49 4C 57	BY DILU		FAX +47 53 49 33 02
00000020	59 4E 20 4A 4F 4E 45 53	YN JONES		5400 STORD
00000028	20 4D 41 59 20 31 39 39	MAY 199		NORWAY
00000030	35 20 20 56 31 2E 30 36	5 (U1.06		Ver 02.07.95
00000038	29 0A 20 20 20 20 20 20	>0		Navigate with <+>
00000040	20 20 20 20 20 20 20 20			
00000048	20 20 20 20 20 20 20 20			ALT <+> 1 page up/down
00000050	20 20 20 20 20 20 20 20			Shift <+> 10 pages
00000058	20 20 20 20 20 20 20 20			CTRL <+> 100 pages
00000060	20 20 20 20 20 20 20 20			Ctrl/Shift <+> Top/Bottom
00000068	20 20 20 20 20 20 20 20			
00000070	20 20 0A 0A 20 20 20 20	---		TAB - Hex / Decimal
00000078	20 20 4E 2E 42 2E 20 49	N.B. I		Direct editing
00000080	66 20 75 73 69 6E 67 20	f using		F3 - COMMANDS
00000088	74 68 69 73 20 70 72 6F	this pro		
00000090	67 72 61 6D 20 66 6F 72	gram for		10 0
00000098	20 74 68 65 20 20 66 69	the fi		

For those of you who know the story of Anne Frank during World War II; there is a disk loaded with files and pictures for a true accounting of this amazing woman. This is disk ED-02. The programs are zipped and has an unzip program making the unzipping effortless. If you want to send me formatted disks with return postage, that is fine for me and they will be sent back to you immediately! You should consider obtaining the LIBguide (library guide) disk.

LIST member Paul Chomitz has asked if any LIST member has a copy of the IBM version of XCHANGE. Paul states that his business runs with the QL, however, he has purchased an IBM laptop computer and would like to exchange files between the QL and the IBM laptop. If anyone would like to sell this software to Paul, he can be reached at: R.G.C. Travel Agency Ltd., 95 Delancy St., New York, NY 10002 - Tel: 212-677-9290.

See you next month... Bob Gilder

My address & telephone number:
69 Jefferson Place,
Massapequa, NY 11758
516-541-2271

1 Musical instruments are recorded.

2 The digital sounds are compressed and put onto a computer chip, which can then be attached to a sound card

3 When using programs that requires sound, the software sends requests to the chip for different instruments. The chip does not contain every single note of a piano for example, but if it has an 'A' flat and an 'A' sharp, it can generate an 'A' sound by making an educated guess.

4 The sound chip plays the recorded music.

Benefits

Wave-table sound is much more realistic than M.I.D.I. synthesized sound, and thus sounds more convincing. It can use a process called enveloping to turn down the volume on a digital guitar note just like the fade of a real guitar string after it is plucked.

Problems

Every manufacturer uses a different instrument for the basic sounds, so that pianos, for example, might sound different on computers using different chips.

Outlook

A council of P.C. software and hardware makers, including Microsoft, has adopted a set of standards for multimedia PC's sold next year that will require all Intel-based machines to have a wave-table synthesis chip.

PC Makers Are Focusing on Fine-Tuning the Sound

By LAWRENCE B. JOHNSON

The personal computer, which is swiftly evolving into an all-purpose home entertainment and work center, has lagged behind in a sound-technology backwater. While you can listen to National Public Radio on the Internet or slide Beethoven onto your CD-ROM player, the sound wafting from the PC has the crackly ring of grandpa's radio — the one he retired to the attic long ago.

But this "incredible magnet" of tasks and entertainment — as Robert W. Stearns, vice president of technology and corporate development at the Compaq Computer Corporation, called the PC — might finally be ready to deliver sound quality on a par with its number-crunching skills. Compaq, the Hewlett-Packard Company, the International Business Machines Corporation and other PC manufacturers are making an aggressive effort to refine PC sound.

The main obstacle, said Tommy Freadman, a loudspeaker designer, has been sound cards designed by digital whizzes who do not know how to convert the signal once the digital stream has been converted into the analog sound that you hear.

Another problem, added Mr. Stearns at Compaq, is overtaxed microprocessors. "There is a tremendous amount of processing going on for full-motion video and high-quality sound," he said.

A conventional high-fidelity system threads a digital signal through a CD player's digital-to-analog converter then to an amplifier and then to the loudspeakers. In a PC, the digital-audio signal from a floppy disk, D-ROM or Internet site passes through a sound card containing a

digital-to-analog converter and amplifier.

While some PC sources offer potentially excellent sound, radio on the World Wide Web is still fairly primitive. The amounts of data are too much for a microprocessor to handle smoothly and quickly.

Manufacturers have been trying to find a cost-effective solution. Shifting the sonic burden from the microprocessor to a dedicated chip, for example, could produce excellent results but the cost of the chip and the added storage capacity would drive up the basic price of the PC.

Manufacturers feared that consumers would balk at the built-in cost of better sound. The solution seemed to be in add-ons.

Pentium processors operating at 75 megahertz and faster have opened the door for better PC sound through a relatively new technology — wave-table synthesis. It has been sold in computer sound cards for about a year and is coming in supplemental software.

The wave-table is a bank of digitally synthesized musical sounds, for example, from a violin, trumpet or guitar. These stored sounds are drawn on and blended, either by the musical instrument digital interface system, or M.I.D.I., used in computer sound cards or by a new generation of dedicated chips.

"The quality of sound you can get through the wave-table is astonishing," said Gerald W. Tschetter, an assistant general manager at the Yamaha Corporation of America, a unit of the Yamaha Corporation. "For a few hundred dollars' worth of add-ons, you can do things on your PC now that 10 years ago musicians in the best studios in the world could not have done."

Hewlett-Packard used the wave-

table in its new Pavilion series of PC's, featuring loudspeakers from Altec Lansing Technologies, a unit of Mark IV Industries.

"In many ways, audio quality has become one of the more important aspects of PC's in the home," said Webb McKinney, general manager of Hewlett-Packard's home products division.

Consumer expectations for PC sound are likely to rise when the CD-size digital video disk, capable of

New audio has 'astonishing' quality.

holding an entire movie with spectacular audio, comes to market in late 1996 or early '97.

While the sound available from PC program sources has improved, the mediocrity of sound cards must be addressed on two fronts: the quality of the digital-to-analog converter and the quality of the power amplifier.

Mr. Tschetter at Yamaha said that the modest amplifiers built into sound cards were never expected to meet the demands of hi-fi quality loudspeakers and the converted analog signal should be fed to an amplifier outside the PC.

"In most instances," said Mr. Tschetter, "the amplifier provided in a sound card is the same used in the headphone output of a cassette deck; its power output amounts to a fraction of a watt." He said comput-

er sound needs only 5 to 10 watts.

Other engineers contended that the sound card had the potential carry the full load.

Peter Theran, senior manager of multimedia products at the Bo Corporation, said, "The reality is that PC companies haven't invest in putting high-quality sound in PC

"We've steadily improved sound in PC's, but it's still nowhere near a par with the average stereo system. For PC manufacturers, it's really a twofold investment — the necessary electronics and the additional space required to accommodate them. The computer would have to be made larger."

In its Pavilion Series, Hewlett-Packard provided for both optional amplifiers were installed in the Pavilion sound cards, HP recommended routing the unamplified signal from the sound card directly to hefty amplifiers, which are mounted on speakers provided with its 14- and 15-inch monitors.

Tommy Freadman, chief engineer at Altec Lansing and designer of the H-P speakers, was one of the first engineers from the audio hi-fi world to examine the experience of listening to PC sound. He insisted on the one thing that has held back computer audio is price.

"Everybody is driving the cost down," Mr. Freadman said. "Everybody is trying to hit a very aggressive price point on the same Intel microprocessor. It's all about packaging Intel and Microsoft. But we can create better audio."

The price of the hardware to do so, he estimated, could be as low as \$150; his ACS500 surround-speaker array, billed by Altec Lansing as the multimedia equivalent of the Dolby Surround sound in movie theaters, costs \$450.

"SQ" NOTES

BY R.A.HILSMANN

This month a look at another program that has been around for a while, but does not support the new gismos we have hung onto the 2068, such as a centronic type printer. I am sure you all have a copy of it since it has been one of the first programs released for the 2068 and was written by one of the better software houses in Britain, namely PSIDN. VU-CALC has its limitations, especially if it is run in the 2068, since the 2068, as everybody knows by now, has less memory available in the bottom section of the available free RAM. VU-CALC as VU-FILE had been written for use in the SPECTRUM, and will not perform as well when run in the limited space available in the 2068. One runs out of space for variables rather fast, and therefore can not enter the same amount of information into VU-CALC as one could in the SPECTRUM. Yes it will do as well as in the SPECTRUM in a SPECTRUM EMULATED 2068.

I have made a few changes in the basic portion of the program to make it run with the OLIGER SYSTEM, and also made changes to support a centronic type printer. It is setup right now to support EPSON printer commands. If you have another printer, you will have to change the codes in the machine code portion of this program which I added. This can easily be done by poking the correct codes into the machine code. A list of the locations will appear right after the basic listing.

Here goes! Enter the programs you will find in the next columns preferably with the 2068 in the TIMEX mode. For the basic portion, you may load the original version of VU-CALC basic into the machine, and then make line by line changes.

```
10 CLEAR VAL "29327": BORDER S
GN PI: INK VAL "9": LOAD /"UCALC
"CODE
60 LOAD /"UCPRINT"CODE: GO TO
VAL "3200"
1000 GO SUB VAL "1100": LOAD /a$
CODE: CLS: GO TO USR e2
1100 GO SUB VAL "1200": PRINT
"ENTER file name": INPUT a$: R
ETURN
1200 PAPER VAL "7": BORDER SGN P
I: CLS: RETURN
2000 INPUT "Print to 2040 Printe
r (y/n)": a$
2010 IF a$="n" OR a$="N" THEN GO
TO VAL "2020"
2015 IF a$="y" OR a$="Y" THEN GO
TO VAL "2060"
2017 GO TO VAL "2000"
2020 DIM l$(VAL "2"): POKE VAL "
23658",VAL "8": INPUT "Printout
to which column":cc: INPUT "Pri
ntout to which line":ls
2025 LET cc=cc+VAL "7": LET ch=I
NT (cc/VAL "255"): POKE VAL "620
05",ch: LET cl=cc-(VAL "255"+ch)
: POKE VAL "62004",cl
2030 LET ll=(CODE l$(VAL "1")-VA
L "64"): IF CODE l$(VAL "2")>VAL
"32" THEN LET ll=VAL "26"+(CODE
l$(VAL "2")-VAL "64")
2035 POKE VAL "62003",ll: LET cl
=VAL "350"-cc: LET ch=INT (cl/VA
L "256"): LET cl=cl-(VAL "256"+c
h): POKE VAL "62000",cl: POKE VA
L "62001",ch
2050 RANDOMIZE USR VAL "62005":
GO TO VAL "2070"
2060 COPY
2070 GO TO USR E3
3000 GO SUB VAL "1200": PRINT AT
VAL "9",VAL "2": "ENTER 1: EXI
T PROGRAM":TAB VAL "9": "2: CLE
AR WORKSHEET":TAB VAL "9": "3:
RETURN TO VU-CALC": INPUT "OPTIO
N?":a
3010 IF a>NOT PI AND a<VAL "4" T
HEN GO TO (VAL "3000"+a*VAL "100
")
3020 GO TO 3e3
3100 GO SUB VAL "1200": STOP
3200 DIM b$(VAL "100"): DIM c$(V
AL "20"): DIM l$(VAL "2"): GO SU
B VAL "1200"
3201 LET e1=VAL "29764": LET e2=
VAL "29767": LET e3=VAL "29770":
LET zz=VAL "34553": LET bfre=VA
L "34562": LET dcontx=VAL "34140
": LET xcol=VAL "32880": LET xro
w=xcol+LN PI: GO TO USR e1
3300 GO TO USR e2
4000 GO SUB VAL "1100": SAVE /a$
CODE zz,(PEEK bfre+VAL "256"+PEE
K (bfre+SGN PI)-zz): CLS: GO TO
USR e2
5000 LET c$=STR$ VAL b$: GO TO U
SR dcontx
9000 GO SUB VAL "1200": PRINT
"ERROR was at": "COLUMN ":PEEK
xcol+SGN PI
9100 LET a=PEEK xrow: LET b=INT
(a/VAL "26"): LET a=a-b*VAL "26"
: LET d$=CHR$ (b+VAL "64")+CHR$
(a+VAL "65"): IF b=NOT PI THEN L
ET d$=d$(VAL "2" TO VAL "2")
9200 PRINT "ROW ":d$: INPUT "
Press ENTER TO CONTINUE":x$: GO
TO USR e2
```



```

9300 CLEAR VAL "29327": DIM B$(VAL "100"): DIM C$(VAL "20"): LET
BFRE=VAL "34562": LET DCONTX=VAL "34140": LET XCOL=VAL "32880":
LET XROW=VAL "32881": LET E1=VAL "29764": LET E2=VAL "29767": L
ET E3=VAL "29770": GO TO USR E3
9400 CLEAR : SAVE /"VUCALC" LINE
10: SAVE /"UCPRINT"CODE 62000,16
2: SAVE /"VUCALC"CODE 29328,5225
9500 DATA 10,1,0,21,84,0,213,229
,197,245,237,91,48,242,33,13,135
,237,75,50,242,197,237,75,52,242
,219,127,203,103,32,250,126,254,
96,32,63,237,161,234,92,242,24,6
3,126,254,33,204,177,242,254,95,
204,180,242
9510 DATA 254,64,204,183,242,254
,35,204,186,242,254,34,204,189,2
42,254,58,204,192,242,254,39,204
,195,242,254,36,204,198,242,254,
59,204,201,242,254,38,204,204,24
2,254,63,204,207,242,211,127,237
,161,234,74,242,62,13,211
9520 DATA 127,62,10,211,127,193,
16,7,241,193,225,209,195,74,116,
197,25,24,149,62,12,201,62,9,201
,62,18,201,62,15,201,62,14,201,6
2,20,201,62,13,201,62,27,201,62,
11,201,62,10,201,62,24,201
9600 RESTORE 9500
9610 FOR x=62000 TO 62161
9620 READ a: POKE x,a
9630 NEXT x
9999 DELETE 9500,

```

Next load the code portion of VU-CALC into the machine. There are no changes in the this code, and it will run equally well in either the SPECTRUM or TIMEX mode. Now run the basic program you have entered with GO TO 9500, this will poke the 161 bytes of machine code into location 62000 to 62161. The program will delete lines 9500 to end, you could save the basic portion before you run it, since your entry would otherwise be lost. After all this, insert a disk, and save VU-CALC with GO TO 9400. Thats all there is to it folks.

How to run the new version of VU-CALC? Just as before, but you will be asked which printer you are using when printing time comes around. Well there is something else to learn, the printer codes have to be imbeded into your text, unless you elect to just print it all in pica type. The new version

of VU-CALC will give you all the commands available your printer can handle, this means all commands, even the ones which need an ESCAPE (27).

Should you for any reason run out of memory while using the program, try GO TO 9300, this will clear the variable area without wiping out the text. If it appears that you lost the text, move the cursor over the area where the text used to be, and it should reappear. Running out of memory will occur in the TIMEX mode most likely, especially after entering a lot of formulas for calculations.

Here now the new codes for VU-CALC, and what they will do!

- £ Tells the printer that the next characters are printer codes. The english pound sign has to precede all command sequences. Even if two or more commands are following each other.
- The underline symbol is to be inserted after the pound sign for Horizontal Tabulation. (Control Code decimal '9') Example = £_
- & Character "&" gives the command "Perform Line Feed" (Control code decimal '10') Example = £&
- ; Character ";" gives the command "Advance Paper to Next Vertical Tab" (Control code decimal '11') Example = £;
- ! Character "!" gives the command "Advance Paper to Head of Next Page (Form Feed)" (Control code decimal '12') Example = £!
- Character "." gives the command "Carriage Return (print out Buffer)" (Control code decimal '13') Example = £.

- " Character " gives the command
"Select Double Width Print Mode
with Automatic Cancel (Shift
out)"
(Control code decimal '14')
Example = f"
- # Character "#" gives the command
"Select Condensed Print Mode"
(Control code decimal '15')
Example = f#
- @ Character "@" gives the command
"Deselect Condensed Print Mode"
(Control code decimal '18')
Example = f@
- : Character ":" gives the command
"Deselect Double Width Print
Mode"
(Control code decimal '20')
Example = f:
- ? Character "?" gives the command
"Cancel Data on same Line"
(Control code decimal '24')
Example = f?
- \$ Character "\$" gives the command
"ESCAPE (prepares the printer
to receive other control codes"
(Control code decimal '27')
Example = f\$-1 would give the
printer the command to select
underline mode on an EPSON com-
patible printer.

f\$-1f\$-0 would select underline mode and deselect underline mode at the same time, but as you can see, each command has to be preceded by a pound (f) sign. But the DOLLAR (\$) SIGN gives the printer the ESCAPE CODE, which should be universal (decimal 27) on all printers around. This will open pages of commands you may insert into VU-CALC, and this should make use of just about anything your printer can throw at you. Remember though that all printer codes will not get printed and therefore do not exist in your text, so if you insert any such code in your text or calculations, you have to consider this

fact in the layout of our text.

Another thing I noticed, and this is something which happens when one returns from printing a page or two, you will have to enter any command twice to make it work. I have not tried to fix this, since it does not interfere with normal operation. Just one more quirk added to VU-CALC.

As to your layout, it is a good idea to leave the first (1) column free as a margin, this is a good place to enter your printer codes. Printout of a regular page will, when using PICA type, go to column 11 or 12 considering margins on either side. If you have a few lines that do not have text on them, you may enter line feed commands after your text, or on that line, this will allow you to enter a larger amount of text than VU-CALC would normally allow.

On the next page I have a letter head which I use in my business, this will give you an example of the layout before printout and also gives you an idea of what the finished product looks like after the printer gets through with it.

I hope you again have use for one of the oldies for your computer, even with all its limitations a good program.

This it again! I do not know at this time what I will have ready for the next issue of this newsletter. I am working on a few things at this time, and don't know if I will have them ready. As I mentioned some time ago, I am working presently on a few additions to the ROM for the SINCLAIR. At this time I have the DELETE, a RENUMBER, and bytes FREE routine finished. Next will be the ON ERROR routine, and after that I will have to see how much memory I have left to add other routines.

BANNER
For The TS 2068
By Christopher Raynak

This is a short program to print long banners featuring large characters on the 2040 printer. Unlike some other banner programs, you do not have to type DATA statements that contain each character's dot makeup. This program looks directly into the ROM for the dot patterns. The 2068 stores each scan line of dots as a single decimal number. This is unlike the TS 1000 which its dot patterns as binary 1's and 0's. In the 2068 ROM they start at address 15359. This program works with all characters except inverse and user defined and regular graphics.

```

1 DIM B$(8,8)
2 PAPER 0: BORDER 0: INK 7: C
3 PRINT AT 10,4:"Banner by Ch
4 RAISE 100
5 PAPER 1: BORDER 1: CLS
6 PRINT "When entering your m
7 sses you must remember that y
8 ou are limited to 32 characters
9 PRINT "Also, you cannot use
10 a user def. graphics or regular
11 graphics for banners." "Please
12 select one of the letter sizes f
13 rom below."
14 PAPER 2: PRINT "
15 PAPER 1
16 PRINT "1 3x8 2 15x15
17 3x22 4 15x22 5 15x22
18 3x22 6 15x22 7 15x22
19 3x22 8 15x22 9 15x22
20 CLS
21 PRINT "Please enter your me
22 ssa:
23 INPUT C$: IF LEN C$ > 32 THEN
24 LET C$=C$(1 TO 32)
25 PAPER 3: PRINT AT 8,0:"Your
26 message is being processed." P
27 APER 1
28 FOR Z=1 TO LEN C$: PRINT AT
29 10,Z-1;C$(Z): LET L=15359+(CODE
30 C$(Z)*8)
31 REM Finds address of first
32 scan line.
33 REM *****
34 REM Converts decimal #
35 REM of the scan line of
36 REM corresponding character
37 REM in the ROM to binary.
38 REM *****
39 FOR X=1 TO 8
40 LET L=L+1: LET D=PEEK L
41 FOR Y=1 TO 8
42 LET B$(Y,X)=CHR$(CODE "0
43 +INT (D/2))
44 LET D=INT (D/2)
45 NEXT Y
46 NEXT X
47 PRINT "
48 REM *****
49 REM Rotates later 90
50 REM degrees to the right.
51 REM *****
52 FOR X=1 TO 8
53 FOR Y=8 TO 1 STEP -1
54 IF B$(Y,X)="1" THEN GO TO 1
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491 FLASH 1: INK 0: PAPER 7: PR
INT AT 12,3:"**PRINTER IN OPERAT
ION**" FLASH 0
492 IF S=1 THEN LPRINT A$
493 IF S=2 THEN LPRINT A$ A$
494 IF S=3 THEN LPRINT A$ A$ A$
495
501 INK 7: PAPER 1: PRINT AT 12
3:
502 LET A$=""
510 NEXT X
520 NEXT Z
530 PRINT AT 13,0:"Would you li
ke to print another message?": I
NPUT A$: IF A$(1)="N" OR A$(1)="
n" THEN GO TO 1000
540 INPUT "Same letter size?": A
$: IF A$(1)="N" OR A$(1)="n" THE
N CLS: GO TO 3
550 CLS: GO TO 10
1000 REM *****
1010 REM Memory Used=2040 bytes*
1020 REM *****

```

BANNER 1000
By John Marion

The purpose of this program is to print out banners on your Timex printer using your ZX81 or T/S 1000. After typing in and running, you will be instructed to "ENTER YOUR MESSAGE TO PRINT". Now enter your message and press return. Next you will be asked to choose a "bit character". This is the character which makes up the letters on your banner. After entering your choice of bit, your banner will begin to print out. Choice 3 will use the same letter for a bit as the letter it is currently printing. After your banner is finished, the program will run again.

```

100 REM BANNER 1000
110 CLS
120 PRINT AT 4,7:"***BANNER 100
0***"
130 PRINT AT 10,2:"ENTER YOUR M
ESSAGE TO PRINT"
140 INPUT A$
150 IF A$="" THEN GOTO 140
160 DIM B$(32)
170 DIM X(8,8)
180 REM CHOOSE BIT
190 CLS
200 PRINT AT 4,7:"***BANNER 100
0***"
210 PRINT AT 8,6:"CHOOSE BIT CH
ARACTER"
220 PRINT AT 10,6:"(1) "
230 PRINT AT 12,6:"(2) "
240 PRINT AT 14,6:"(3) SAME AS
LETTER"
250 INPUT A
260 IF A<1 OR A>3 THEN GOTO 260
270 REM PRINT BANNER
280 CLS
290 FOR D=1 TO LEN A$
300 IF CODE A$(D)>128 THEN LET
A$(D)=" "
310 FOR Y=1 TO 8
320 LET X(Y,1)=PEEK (Y-1+7550+

```

```

8*CODE A$(D)))
400 NEXT Y
410 FOR Y=1 TO 8
420 LET E=X(Y,1)
430 LET X(Y,8)=(E)=128)
440 IF E=128 THEN LET E=E-128
450 LET X(Y,7)=(E)=64)
460 IF E=64 THEN LET E=E-64
470 LET X(Y,6)=(E)=32)
480 IF E=32 THEN LET E=E-32
490 LET X(Y,5)=(E)=16)
500 IF E=16 THEN LET E=E-16
510 LET X(Y,4)=(E)=8)
520 IF E=8 THEN LET E=E-8
530 LET X(Y,3)=(E)=4)
540 IF E=4 THEN LET E=E-4
550 LET X(Y,2)=(E)=2)
560 IF E=2 THEN LET E=E-2
570 LET X(Y,1)=(E)=1)
580 NEXT Y
590 FOR F=24 TO 1 STEP -1
610 FOR I=8 TO 1 STEP -1
615 IF X(I,F/3)=0 THEN LET E$="
620 IF X(I,F/3)=1 THEN LET E$=(
"■" AND A=1)+( "■" AND A=2)+(A$(D
) AND A=3)
630 LPRINT E$;E$;E$;E$;
640 NEXT I
650 LPRINT
655 IF F<3 THEN GOTO 665
660 NEXT F
665 IF D<1 THEN GOTO 680
670 NEXT D
680 RUN

```

More One-Liners for the 2068

The "2068 Spirograph" routine drew a good bit of response including a letter from Robert Hartung, former writer for SYNC magazine. He informs us that the routine is a variation of one which is at the top of page 472 of Morse, Adamson, Anrep, and Hancock's Essential Guide To T/S Home Computers. Another variation is this one Robert made up for SYNC the month Ziff Davis pulled the plug.

```

1 LET P=INT (RAND*3): LET I=IN
T (RAND*3): IF P=1 THEN RUN
2 CLS: PLOT 65,27: ON ERR GO
TO 2: INK 1: PAPER P: BORDER IN
T (RAND*3): BRIGHT INT (RAND*2): D
RAW OVER 1:120,120,INT (RAND*300)
*PI: PAUSE 50: IF INKEY$="0" THE
N ON ERR RESET: STOP
3 RUN
4 SAVE "draw" LINE 1
5 REM - Keying "0" during the
PAUSE 50 of line 2 permits stop-
ping the routine. Otherwise the
ON ERR instruction will ignore
"STOP" and "BREAK".

```

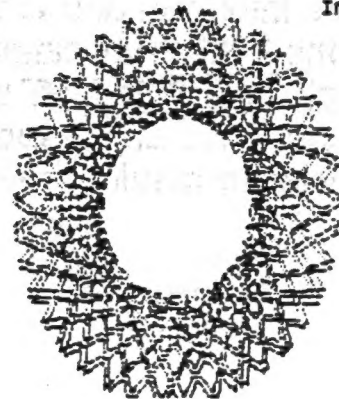
The following short programs were borrowed from the Sinclair Timex User Groups Newsletter of the Boston Computer Society (Volume 3, issue 4). As you can see some pretty neat effects can be achieved using only one program line with the 2068.

```

10 INPUT "type a number, 0 to
50 "X: INPUT "how many repeats
? "Y: FOR N=1 TO Y: PLOT 65,27
: DRAW OVER 1:120,120,(X+10-N)*3
*PI: NEXT N

```

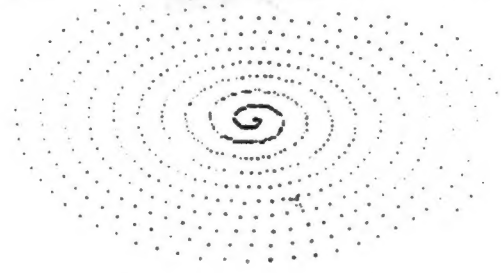
Input 5,5



```

10 FOR X=0 TO 65 STEP .1: PLOT
2*X+SIN X+125,X*COS X+33: NEXT
X

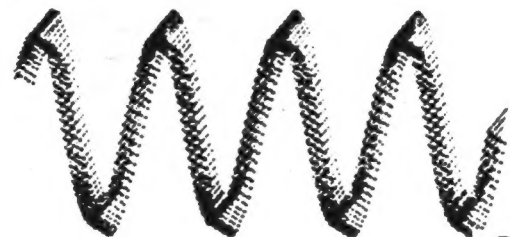
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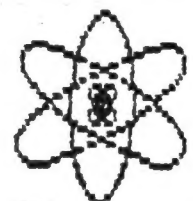
```

10 FOR X=0 TO 254: PLOT X,40+3
IN (X/10)+33: DRAW 10,10: DRAW -
10,S: NEXT X

```



TSH



$E=mc^2$